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FAIRCHILD
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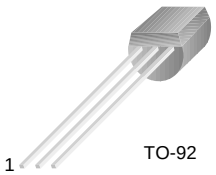
MPSA05/MMBTA05

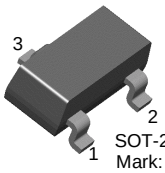
NPN General Purpose Amplifier

- This device is designed for general purpose amplifier applications at collector currents to 300mA.
- Sourced from process 10.



TO-92

1. Emitter 2. Collector 3. Base



SOT-23
Mark: 1H

1. Base 2. Emitter 3. Collector

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	60	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector current - Continuous	500	mA
T_J, T_{stg}	Junction and Storage Temperature	-55 ~ +150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = 1mA, I_B = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_C = 100μA, I_C = 0	4			V
I_{CEO}	Collector Cutoff Current	V_{CE} = 60V, I_B = 0			0.1	μA
I_{CBO}	Emitter Cutoff Current	V_{CB} = 60V, I_E = 0			0.1	μA
On Characteristics						
h_{FE}	DC Current Gain	I_C = 10mA, V_{CE} = 1.0V I_C = 100mA, V_{CE} = 1.0V	100 100			
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 100mA, I_B = 10mA			0.25	V
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = 100mA, V_{CE} = 1.0V			1.2	V
Small Signal Characteristics						
f_T	Current Gain Bandwidth Product	I_C = 10mA, V_{CE} = 2V, f = 100MHz	100			MHz

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2.0%

Thermal Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Max.		Units
		MPSA05	*MMBTA05	
P_D	Total Device Dissipation Derate above 25°C	625 5	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	83.3		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	357	°C/W

* Device mounted on FR-4 PCB 1.6" × 0.06"

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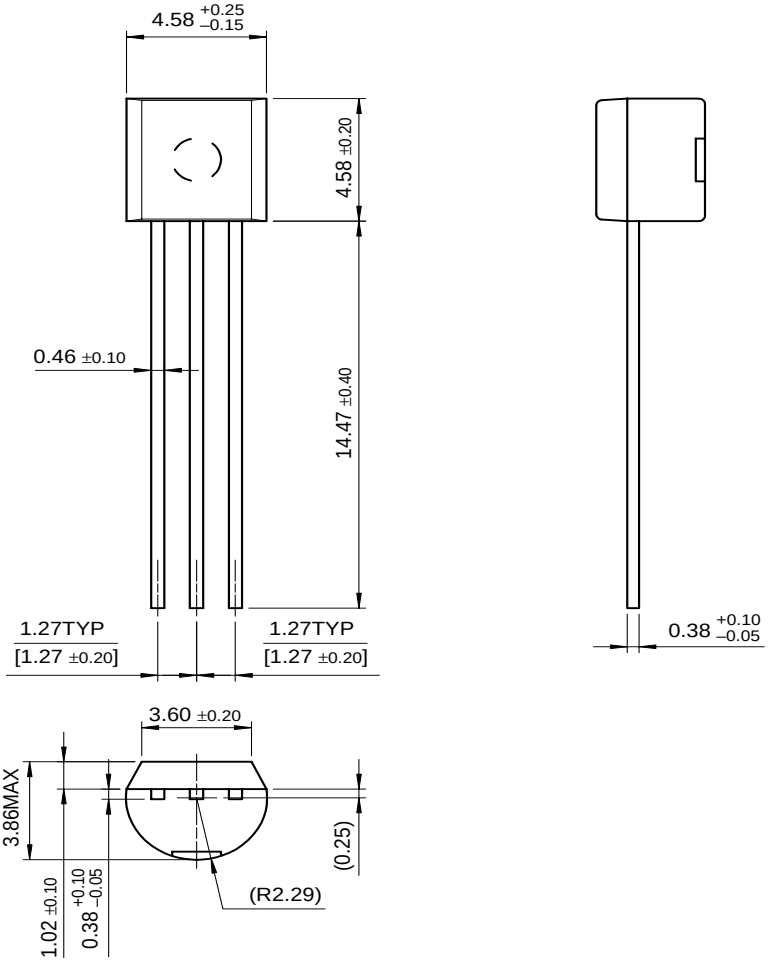
Package Demensions

TO-92



Dimensions in Millimeters

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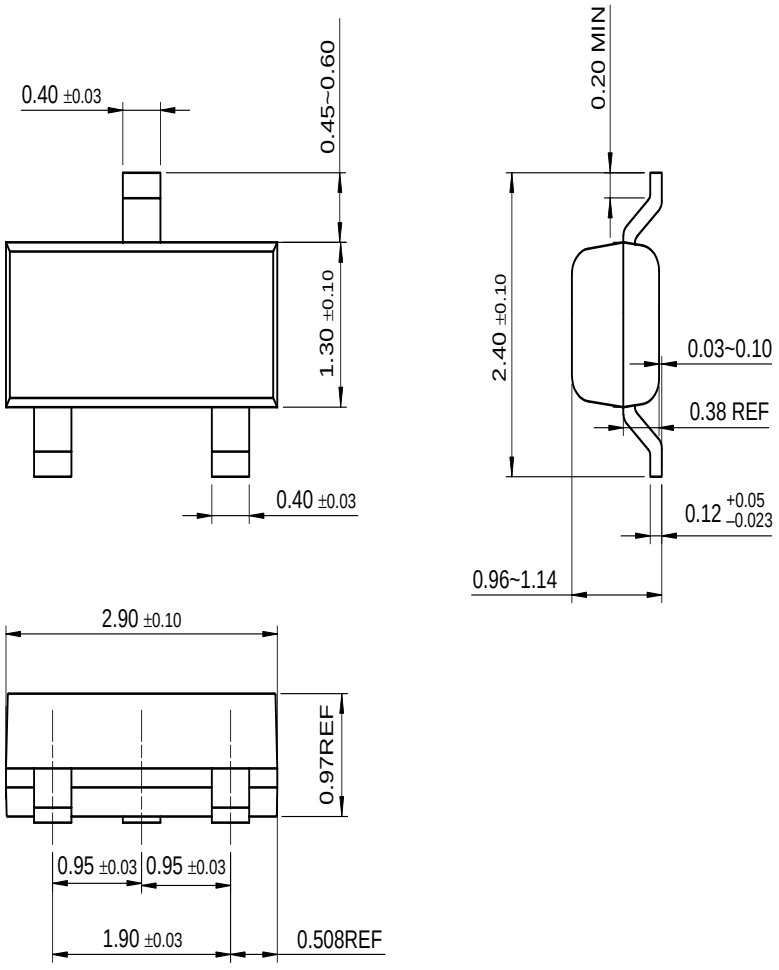
Package Demensions (Continued)

SOT-23



Dimensions in Millimeters

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